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ABSTRACT

This collection of abstracts is part of a continuing series providing information on recent doctoral dissertations. The 23 titles deal with a variety of topics, including the following: (1) the effects on reading comprehension of a number of reader-related factors, including lookback during studying, oral versus silent reading modes, reading achievement, anxiety, attention, interest, and knowledge of subject matter: (2) the effects on comprehension of such text-related factors as analogy, metaphors, and cohesion: (3) a psycholinguistic model of reading comprehension: (4) reading comprehension of subject nominalization in different syntactic and semantic contexts: (5) developmental differences in comprehension and recall of prose: (6) units of information processing in reading: (7) short-term and long-term reconstructions of reading by tenth grade students: (8) the effect of schemata and text length on the number of inferences produced by adult readers in free recall of a fictional story: (9) discourse effects on children's resolution and recall of anaphoric relationships: (10) clustering in free recall tasks in normal and exceptional children: and (11) readers' expectations for story structures. (GT)

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Reading, Comprehension, and Memory Processes:

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KENNETH S. GOODMAN'S THEORY OF READING: A PSYCHOLINGUISTIC AND EPISTEMOLOGICAL ANALYSIS
Order No. 8000674

AKURAL, Kathryn Rider, Ph.D. Indiana University, 1979. 347pp.

Since it first appeared in print in 1967, Kenneth S. Goodman's theory of reading has stimulated great interest and controversy not only among reading researchers but also among teachers of reading and reading educators. Challenging conventional instructional practices on pragmatic as well as theoretical grounds, Goodman's view of reading as a "psycholinguistic guessing game" is a radical departure from the traditional view which regards reading as a process of precise and sequential word identification. It may not be an exaggeration to view the impact of Goodman's theory on reading as analogous to that of Chomsky in the fields of linguistics and psychology.

The purpose of this study is to analyze and evaluate the significance of Goodman's psycholinguistic theory of reading. Goodman supports his theory with his research on miscues, or deviations from the printed text, made by readers of various ages and levels of proficiency. Underlying both theory and research are a number of assumptions about the nature of language and learning as well as about the nature of the reading process itself. This study identifies and examines the major assumptions of Goodman's work in the light of modern psycholinguistics and epistemology. Because the criticism directed toward these assumptions in psycholinguistics and epistemology can also be directed toward a theory of reading which is based upon these assumptions, this approach provides a methodologically sound way of evaluating Goodman's work.

Epistemology is treated in this study not as a proper subject of inquiry per se but as a way of studying the subject of reading. Epistemology aims at clarifying the fundamental ideas in learning and knowledge and synthesizing the methods of different disciplines into a coherent and comprehensive system. Sufficient familiarity with the major theories of knowledge may provide insight into the formalities of theory formation.

Among the most controversial assumptions underlying Goodman's theory are his premises that a single reading process characterizes both beginning and proficient reading and that learning to read is as natural a learning to talk. These assumptions are subjected to a detailed analysis as we attempt to identify and elucidate the arguments on both sides of these issues.

The central assumption underlying miscue research -- that the same process describes both oral and silent reading -- is examined at some length. Research from miscue analysis, speech perception, and comparison studies of good and poor readers is reviewed in light of its relationship to Goodman's contention that reading and listening are parallel processes.

The study asks what Goodman's theory of reading has to say about issues ranging from the nature of knowledge to the nature of language. No effort is made, however, to establish any conclusive solution to the significant epistemological issues introduced by Goodman's theory. The major concern is the identification of the epistemological problems issuing from Goodman's theory of reading and the examination of his philosophical positions and methodology. This approach is new only in the sense that in the past epistemological problems of reading theories have been inexplicably ignored in the reading literature.

AN INVESTIGATION OF LOOKBACKS DURING STUDYING
Order No. 8004121

ALESSI, STEPHEN MARK, PH.D. *University of Illinois at Urbana-Champaign*, 1979. 167pp.

A model of study is outlined which divides activities into three phases; (1) before reading, (2) during reading, and (3) after reading. Within the reading phase, activities are further classified as appropriate to one of three things; (1) monitoring the level of comprehension, (2) activities appropriate to segments of the text adequately comprehended, and (3) activities appropriate to segments of the text when comprehension fails. Possible causes for comprehension failure are discussed and strategies aimed at remediating the failures are considered.

In particular, looking back in the text is proposed to be a useful fixup for comprehension failures resulting from a deficit of prerequisite knowledge. Three experiments investigated the hypothesis that well timed and directed lookbacks facilitate comprehension be remediating comprehension failures. The first two experiments tested the suitability of the experimental materials. The third experiment tested the hypothesis that lookbacks will prevent comprehension failures due to lacking prerequisite knowledge.

Evidence was found that experimenter provided lookbacks do facilitate comprehension. In the light of these results the training of natural lookbacks during study holds promise as a means of improving students' study behavior.

A STUDY OF FOURTH GRADERS' COMPREHENSION OF FIGURATIVE LANGUAGE IN READING Order No. 8010715

BROWN, VIRGINIA SUGGS, PH.D. *Saint Louis University*, 1979. 84pp.

The purposes of this study were (1) to compare urban students' performance on figurative language test items with their performance on comparable non-figurative language items, (2) to compare inner-city black students' performance on figurative language test items with their performance on comparable non-figurative language items, and (3) to compare the performances of the two groups on the figurative language items.

A sample of 75 fourth-grade students who scored at or above 3.0 on a standardized reading test was randomly drawn from urban schools serving students representative of a general fourth-grade population, that is, with respect to white and black students, socio-economic levels, and reading abilities. Another sample of 75 black fourth-grade students who scored at or above 3.0 on a standardized reading test was randomly drawn from inner-city schools.

An instrument was developed to test students' comprehension of ideas expressed by figurative language and their understanding of those same ideas conveyed in literal terms. The research instrument was administered to both groups of subjects. For each student, it yielded a figurative language score and a non-figurative language score.

A 2 x 2 repeated measures ANOVA was used to analyze the data. There was no significant main effect due to type of student. Although the urban group's overall mean on the combined measures (figurative language and non-figurative language) was slightly higher than the inner-city black group's, the difference was not statistically significant. A significant main effect due to measures was found. This result indicated that urban students and inner-city black students performed significantly better on the non-figurative language test items than on the figurative language items. There was no Groups x Measures interaction; the pattern between performance on the figurative language items and non-figurative language items was essentially the same for the urban groups as for the inner-city black group. Both groups appeared to show similar gain patterns in reading performance as the method of presentation was changed from figurative language to non-figurative language.

For further analysis of the data, the percentage of correct responses was computed for each of the five types of figurative language items. A 2 x 5 mixed effects repeated measures ANOVA was employed. The absence of a significant group effect indicated that the overall performances, averaged across the five figurative language subscales, of the urban students and the inner-city black students did not differ. The obtained statistically significant subscales effect suggested that the subjects did not perform equally well across the five subscales. Results of Tukey's post hoc procedures revealed that the subjects performed significantly better (1) on the idiom and personification subscales than on the simile subscale, (2) on the idiom, personification, and other (metonymy and allusion combined) subscales than on the metaphor subscale, (3) on the personification and other subscales than on the idiom subscale, and (4) on the other subscale than on the personification subscale.

A PSYCHOLINGUISTIC MODEL OF READING COMPREHENSION BASED ON LANGUAGE COMPETENCE, READING PROFICIENCY, AND DISCOURSE ANALYSIS

Order No. 8002344

CHIPPENDALE, ENE-KAJA HARM, PH.D. *University of Missouri - Columbia*, 1979. 319pp. Supervisors: Peter Hasselriis and Dorothy J. H. Watson

Purpose. The purpose of this study was to present and test a model of reading comprehension synthesizing findings from linguistic studies of language development, psycholinguistic studies of the reading process, and psychological studies of discourse analysis.

The interrelationships of these three dimensions of the model were explored to answer questions including: (1) Do all measures of linguistic performance identify similar developmental patterns? (2) Do language performance scores provide predictive information about the quality of oral reading miscues? (3) Is there a qualitative difference between miscues generated in reading social studies, science, and narrative texts and ungraded library material of the same genre? (4) Do subjects with the highest comprehending measures, obtained from an analysis of miscues, also have the highest post-reading retelling scores? (5) Are retelling scores affected by structural and contextual differences of texts? (6) Can specific textual features be identified which may contribute to comprehension gain/loss?

Procedure. During the closing weeks of school, six third graders identified as above average, and below average readers were presented four tasks which provided performance measures of language competence. Each subject subsequently read six complete texts varying in structure, context, and style. 3,452 miscues were analyzed using the *Reading Miscue Inventory* (Y. Goodman and Burke, 1972), the standard scoring of which was expanded to obtain individual proportion scores for each column of the *R.M.I.* and comprehending scores. The schematic structure of each text was diagrammed according to criteria developed by the investigator. Retellings were recorded and analyzed and effects of structural and contextual variation determined.

Major Results and Conclusions. (1) The language performance tasks, while confirming that language acquisition continues in elementary school, did not provide uniform results. The Structural Tasks (C. Chomsky, 1972) resulted in the greatest discrimination among subjects, who fell into three stages of language development.

(2) Performance on language tasks did not consistently provide predictive information about the effectiveness of oral reading strategies for all readers. A closer correspondence emerged from retelling performances. Subjects who scored lowest on the Chomsky tasks also tended to have the lowest retelling scores.

(3) Textual variables affected oral reading strategies. As text became more difficult, readers generally showed an increase in the graphic information processed; a decrease in the percentage of miscues maintaining the grammatical function of the text; increases in the number of uncorrected nonword substitutions; clusters of multiple miscues resulting in meaning loss; a decrease in the percentage of syntactically and semantically acceptable miscues, with the spread between these measures increasing; and fewer attempts at self-correction of comprehension loss miscues.

(4) The relationship between comprehending scores from miscue analysis and retelling scores varied according to reader. The two most proficient readers had the closest match. Two subjects had higher means for comprehending than for retelling, suggesting they may have processed portions of text on a surface rather than meaning level. In contrast, two subjects had significantly higher retelling scores, indicating that despite the use of ineffective oral reading strategies, they were making inferences about the text utilizing prior schema.

(5) This relationship also varied according to text. While the basal narrative, social studies, and science texts resulted in the highest comprehending means, the highest retelling mean scores were elicited from narratives and a science text written as a narrative. Each had a clearly definable structure which was recognized and used during recall.

(6) The selections with the lowest retellings were characterized by unfamiliar concepts and settings; atypical or unrecognizable text structure; and incohesive structure for developing the content. These features were identified in the structural diagrams developed for each text.

RECALL AS A FUNCTION OF QUESTION POSITION AND QUESTION TYPE OF REFLECTIVE AND IMPULSIVE FOURTH GRADE CHILDREN

Order No. 8000193

COOPER, Jerry Edward, Ed.D. West Virginia University, 1979. 301pp.

The purpose of this study was to explore the effect of question position (prequestions and postquestions) and question type (literal and inferential) upon the recall of information by fourth grade children who are either reflective or impulsive. Related purposes dealt with time taken to complete experimental treatments and accuracy at responding to adjunct questions.

Twenty-five reflective and 25 impulsive fourth grade children who scored within the range of 36% to 54% on the cloze participated as subjects. Approximately half of the subjects were enrolled in two elementary schools in Nicholas County, West Virginia, and half were enrolled in two elementary schools in Fayette County, West Virginia.

Five treatments were used in the study and were counterbalanced to control for possible order effects. Treatments were designated as: (1) literal prequestion, (2) literal postquestion, (3) inferential prequestion, (4) inferential postquestion, and (5) no questions or control. Experimental sessions, which included giving directions, reading the materials, and taking the immediate recall test, were conducted for approximately one hour and thirty minutes. After a three hour and fifteen minute time interval, the delayed recall test was given.

The results revealed that the means for the prequestion and postquestion conditions on the dependent measures of immediate relevant recall, delayed relevant recall, immediate incidental recall, and delayed incidental recall did not differ significantly. The mean for the literal question conditions was significantly higher than the mean for the inferential question conditions on immediate and delayed relevant recall measures. However, there was no significant difference between the two question type conditions for immediate and delayed incidental recall. In addition, cognitive tempo did not significantly affect recall performance. Time spent on treatments varied as a function of treatment conditions. Even so, it was not possible to predict a subject's recall score from his time score, nor was the opposite true. Finally, accuracy scores on treatments were significant, but low to moderately correlated with recall scores. Significant correlations between accuracy scores and recall scores indicated that accuracy in answering adjunct questions was somewhat related to recall of material associated with adjunct questions as well as material unrelated to adjunct questions.

The investigator concluded that when it is necessary for children to remember specific facts, literal questions may enhance memory. On the other hand, presentation of inferential questions may not facilitate the recall of inferences. It was also concluded that material incidental to inferential questions is attended to no more closely than material incidental to literal questions. Too, it may be that teachers should be more concerned with the types of questions students encounter than with where the questions occur in materials. Finally, it was concluded that teachers may not need to be concerned with the individual difference of cognitive tempo as they attempt to develop the comprehension skills of middle grade students.

READING COMPREHENSION OF SUBJECT NOMINALIZATION IN DIFFERENT SYNTACTIC AND SEMANTIC CONTEXTS

Order No. 8010279

DiPASQUALE, LINDA L., PH.D. *New York University*, 1979. 154pp. Chairperson: M. Trika Smith-Burke

Transition level readers' ability to comprehend three types of subject nominalization (*'s-ing, that, for/to*) in two syntactic and two semantic contexts presented in two task sets was investigated. Based on previous research suggesting that both syntax and semantics influence children's comprehension of syntactic structures, the following research questions were asked in order to study the problem: (1) Does type of subject nominalization (*'s-ing, that, for/to*) affect comprehension of subject

nominalizations? (2) Does syntactic context affect comprehension of subject nominalizations? (3) Does semantic context affect comprehension of subject nominalizations? (4) Does task set affect comprehension of subject nominalizations? (5) What is the nature of the interactions among all variables?

Four forms of a reading comprehension task were constructed which were designed to measure subjects' knowledge of subject nominalizations and the simple, separate sentences from which these complex sentences were derived. The three types of subject nominalization were embedded in syntactic contexts with or without a center-embedded relative clause and in semantic contexts containing the stative verb *was* followed by an evaluative adjective or a causal verb. These subject nominalizations were then presented in one of two task sets as either task item stimuli or task item responses.

Subjects were 96 Caucasian fifth grade students enrolled in two public schools in a suburban middle-class community in the metropolitan New York City area. The four forms of the reading comprehension task were administered randomly to subjects in the study.

A four-way analysis of variance with repeated measures on four factors was computed on the scores from the reading comprehension task. Significant main effects were found for Type of Subject Nominalization, Semantic Context, and Task Set. Five significant two-way and three-way interactions involving all four independent variables were found. It was concluded that findings related to the analysis of the main effects and the two-way interactions must be interpreted with caution due to the two significant three-way interactions obtained.

The Type of Subject Nominalization x Semantic Context x Task Set interactions suggested that one semantic context was not always easier to comprehend across all three types of subject nominalization in both task sets; that a particular type of subject nominalization was not always easier to comprehend than other types; that trainsition level readers generally comprehended all three types of subject nominalization in both semantic contexts better when they were presented as task item stimuli (Task Set A) rather than task item responses (Task Set B).

The Syntactic Context x Semantic Context x Task Set interaction suggested that a center-embedded relative clause had no effect on transition level readers' comprehension of subject nominalizations embedded in an evaluative semantic context; however, the interaction effect was more evident for subject nominalizations embedded in a causal semantic context.

Both three-way interactions revealed that syntax and semantics interact in various ways to influence comprehension to complex syntactic structures. Thus, further research is needed to assess the effect of the interaction of syntax and semantics on the comprehension of other complex syntactic structures.

GROUP DIFFERENCES IN CONCEPTUAL BEHAVIOR: DEVELOPMENTAL DIFFERENCES IN COMPREHENSION AND RECALL OF PROSE Order No. 8000345

FREDERIKSEN, Janet Donin, Ph.D. University of California, Berkeley, 1979. 144pp.

Two experiments were conducted to explore possible sources of individual differences in school achievement. The research focused on both a type of material and a type of task that children customarily encounter in school—connected discourse and the acquisition of knowledge from that discourse. Specifically, the studies investigated the relationships of such characteristics as age and reading level to discourse comprehension. Comprehension was measured by employing a detailed propositional analysis to assess both the amount and type of information children recalled from passages selected from school texts.

In the first experiment, two groups of first-grade children, differing in both reading level and social class, and two groups of third-grade children, differing only in social class, recalled an aurally presented passage. Differences were found between the first-grade groups in both the amount and type of information recalled, suggesting that good and poor readers may differ in their listening as well as reading comprehension. Since no differences were found between the two third-grade groups, social class per se appeared not to be of major import with respect to comprehension and recall, and therefore was not included as a factor in the second, main, experiment.

The second experiment compared second, fourth, and fifth-grade children representing four different reading levels (A-D). Three passages, selected on the basis of "readability" but varying also in form, content, and structure, were read and recalled by each child. Passages were selected for analyses that permitted comparisons across grades and reading levels. Both the amount of recall and patterns of propositions recalled seemed to reflect a complex interaction between the characteristics of a passage with the characteristics of the child. The largest effect on amount recalled was due to passage differences despite the fact that all passages contained approximately the same number of propositions. Both quantitative (i.e., amount recalled) and qualitative (i.e., patterns of recall) differences were found between grades two and four within reading level B. Qualitative differences were also found between grades four and five within reading level C, although no quantitative differences were apparent. Reading level differences in amount recalled were found only for one of the three passages analyzed; however, qualitative differences were found between reading levels within all grades.

Analyses of the individual passages were especially interesting in revealing how passages interact with children's knowledge and processing skills. One passage, read by grade two in reading group A and by grades two and four in reading group B, was a simple narrative story. The amount recalled from this passage varied with age. A second passage, read by grades two and four in reading group B and by grades four and five in reading group C, was an expository text requiring the reader to make an analogy between parts of the passage. Quantitative differences were found only between second and fourth grades, but the qualitative analyses revealed many interesting differences among all the age and reading level groups. The third passage, read by grades four and five in reading groups C and D, had a high readability level because of its long sentences and unfamiliar vocabulary. Nonetheless, the basic concepts and events elaborated in this passage were few, a characteristic reflected in the relatively short and consistent structures found across groups for this passage. Only this passage showed a reading group difference in amount recalled, a finding seeming to reflect characteristics of the reading pretest employed.

THE EFFECTS OF ORAL AND SILENT READING MODES AND READING ACHIEVEMENT ON READING COMPREHENSION USING THREE QUESTION TYPES Order No. 8010582

GARDNER, JOHN ROBERT, PH.D. *University of Georgia*, 1979. 144pp. Director: James A. Dinnan

Problem. This study was designed to determine the effects of oral and silent reading and low, average, and high reading achievement upon fifth-grade students' responses to unit-repeat, relationship, and classification masures of reading comprehension. The relationships of the independent variables to each of the dependent variables were investigated separately.

Subjects. A randomly selected sample of 90 fifth-grade students (30 per achievement level) were included in the study. Subjects were enrolled in regular programs in seven schools located in suburban Montreal, Quebec.

Procedures. Measures of oral and silent reading comprehension were obtained from two parallel forms of the investigator-designed inventory using 12 selections (third through eighth grade readability) from basal reading material (six passages per form). Subjects were required to read all passages and to attempt to answer orally all 72 questions (24 of each type). Subjects were tested individually in each mode. Order effects of modes and forms were controlled by random assignment to four treatments.

Treatment of Data. A randomized block design with repeated measures was used to test for differences between the dependent variables. Three Two-Way ANOVAs were used to compare the variances.

Findings. The .05 level of confidence was set to test the null hypotheses. (1) Children within all reading achievement levels scored significantly higher under the oral reading condition than did children under the silent reading condition on knowledged of unit (detail) and relationship (influence) measures of reading comprehension. (2) Mode of reading did not affect scores of children at any achievement levels on classification (category) measures of reading comprehension. (3) The interaction effects of mode and achievement were statistically nonsignificant across all criterion measures.

Implications and Conclusions. Analysis of the data obtained from the sample yielded information from which the following conclusions were drawn: (1) Significant differences do exist in comprehension of unit-repeat information between groups which read orally and groups which read

silently. The oral reading mode produced moderately greater achievement on comprehension of units of information than did the silent reading mode. Readers at all three achievement levels scored significantly higher on unit-repeat measures following oral reading than they did following silent reading. (2) Significant differences do exist in comprehension of relationship information between groups which read orally and groups which read silently. The oral reading mode produced slightly greater achievement in comprehension of relationships than did the silent reading mode. (3) Significant differences do not exist between the interaction of mode of reading and reading achievement. It appears that for students in all achievement groups, oral reading to oneself was at least as advantageous for comprehension as was silent reading when time for reading each passage was not held constant.

Children should be encouraged to use oral reading as a strategy for increasing knowledge and memory of details of information contained in story-type material. Since the oral reading procedure found to lead to improved comprehension was self-audience reading, oral reading for meaning should not necessarily take place in a group-audience situation. The benefit of oral reading to comprehension appears to depend upon the nature of the material read, the difficulty of the material relative to the student's reading ability, and the type of comprehension required for satisfactory response.

From the results of this study, the increase in knowledge of units of information gained through reading aloud to oneself appears to outweigh the small extra expenditure of time reported in earlier studies. Educators who are concerned about students who move their lips or whisper while reading silently need to recognize that these symptoms may be an attempt to increase the meaning of material read.

UNITS OF INFORMATION PROCESSING IN READING

Order No. 8009040

GERMAN, KATHERINE LOUISE, PH.D. *University of Illinois at Urbana-Champaign*, 1979. 333pp. Chairman: Dr. John Erickson

In 1966 and 1970, Hochberg postulated the operation of two search guidance mechanisms in the reading process. Based upon the notion that perception is developed through the integration of serial glimpses into a single array, the two search guidance mechanisms described, peripheral and cognitive, attempt to explain economical search patterns of sequential fixations across distributions of information in a visual display.

The peripheral search guidance mechanism (PSG) consists of low acuity information seen in the periphery of the eye, suggesting an optimal visual point to the optic search system and assisting the fovea in obtaining a detailed view of a potentially informative region of text. The cognitive search guidance mechanism consists of knowledge of what has been seen thus far, which may provide constructs concerning potentially informative areas of text.

Through this system, the reader has to account for the order in which print is viewed by mapping spatial organization into temperal sequence and, based upon redundancy and expectancy, provide a storage system for the units processed. After an initial study comparing the reading rates per character of two groups of children on normal and filled text, Hochberg concluded that one of the components of skilled reading was the use of peripheral stimulus patterns as guides to textual sampling.

The present study attempted to replicate and extend Hochberg's initial investigation. Following the presentation of a decoding test to establish ability to read on grade level, a normative sample of fourth grade and college students were presented with six appropriately graded passages in six different orders to eliminate effects of order and passage variation. A similar experimental population was then presented with the decoding test and the six passages one in each of the following textual conditions: normal, phrase, phrase-control, clause, clause-control, and filled. Textual manipulations were accomplished by filling appropriate interword spaces with a '¶' symbol. All passages were sequenced in accordance with a 6 x 6 Latin Square design.

Results were analyzed using reading rate per character and comprehension as dependent measures and the textual conditions as the independent measure. Statistical analyses included analysis of variance and t-tests. The level of significance used for normative data was .05 and the level of significance used for the experimental data was .01.

The results of the study indicated that skilled readers and fast unskilled readers did not differentiate phrase and clause textual conditions from their controls. The slow unskilled readers did differentiate between phrase and phrase-control textual conditions. Subsequent analyses excluded control passages, and the linguistic basis of information chunking was negated in favor of a chunk size based on length.

Reading rates were significantly higher for skilled than unskilled readers on all remaining versions of text. Unskilled readers' rates did not differ significantly on all filled versions of text, while skilled readers' rates were significantly higher on phrase filled text than clause or completely filled text. This data suggested an optimal information chunk size of phrase level, i.e., approximately three words. Comprehension scores analyzed by skill level showed no significant effect of textual manipulation.

Analyses of rate and comprehension by fast and slow readers within each skill level indicated that fast readers were more severly hampered by textual filling than slow readers and that fast reader's comprehension scores decreased, while slow reader's comprehension scores increased.

The data suggests that the peripheral search guidance mechanism is operating as presumed and that the optimal size of the information chunk is approximately three words. The data also suggests that the cognitive mechanism is not based solely on linguistic structure. Recommendations for further investigation are outlined.

FACTORS AFFECTING CHILDREN'S ACQUISITION OF KNOWLEDGE FROM DISCOURSE

Order No. 8000369

HARKER, Judith Olsen, Ph.D. University of California, Berkeley, 1979. 314pp.

This study explored factors affecting children's acquisition of knowledge from discourse. The interaction of semantic aspects of discourse with the cognitive and linguistic development of children in the amount and nature of information they acquire from narrative discourse was investigated. Text factors which were examined are: the semantic content and the semantic network structure of the stories as determined by a detailed representation system, and the temporal connectives between clauses and the order of those clauses which signal the sequence of events. The developmental factors include: grade level, level of cognitive development as measured by the Piagetian seriation test, and stage of language acquisition of "before" and "after".

One aspect of discourse structure related to both linguistic and cognitive development is the understanding of time terms and the sequence of events in a story. In a sequence of events, event B is both after A and before C; analogous to the seriation task where stick 2 is both longer than stick 1 and shorter than stick 3. The terms "before/after" allow events to be ordered either chronologically, or in backwards order without changing meaning, simply by changing the position of the main and subordinate clauses. When events in a story are presented in backwards order, a child's knowledge of "before/after" and his ability to seriate and reorder the events into chronological order should affect his acquisition of knowledge.

Three conditions of story structure were presented: FORWARD, or chronological order; MIXED, containing two sentences in backwards order; and THEN, which use "then" as the clause connective rather than "before/after".

One hundred and forty-one children in three grades (K, 1, 2) were asked to retell each of four short stories (70 words) immediately after hearing the story read by the experimenter. Recall protocols were scored according to two different systems: a detailed semantic representation system (Frederiksen, 1975); and an intuitive clause level system based on the "idea" as a unit, and the sensitivity of these two systems was compared.

Significant grade differences were found for both developmental measures. Performance on the seriation task was independent of performance on the language acquisition task. No developmental factors (grade, seriation or language acquisition) had significant main effects on recall. However, these factors did interact with text variables. The younger children recalled less of the more difficult stories than did the second graders, and tended to simplify these stories by omitting details.

A significant main effect of story structure was found. The recall of MIXED structure stories was generally lower than the THEN structure stories, although this pattern differed in one story. The MIXED structure in story 4 was easier than the other conditions. Main ideas had a consistently higher recall rate than details across all grade and story structure conditions.

The detailed semantic representation system was more sensitive than the clause level scoring in both the quantitative analyses of variance and the qualitative descriptive measures. The propositional structure developed according to the representation system was tested by comparing the predicted and observed inter-propositional dependencies. Children clearly were sensitive to the predicted higher-order dependencies and showed that propositions linked via the semantic structure were processed as a "unit". In contrast, the evidence was weak that children use referential connections to process and to structure recall in this type of simple narrative. The effectiveness of the detailed semantic system (Frederiksen, 1975) was demonstrated for analyzing both recalled propositions and inferences or elaborations which children added to the story.

THE EFFECT OF TEXT-EMBEDDED ANALOGY UPON COMPREHENSION AND LEARNING

Order No. 8002920

HAYES, DAVID ALLEN, PH.D. *The University of Arizona*, 1979. 233pp.
Director: Robert J. Tierney

The purpose of this study was to examine high school students' learning from prose materials which were augmented by analogy in three different ways: (1) embedded in text, (2) given as the topic of an antecedent text, (3) embedded in text in conjunction with an analogous-antecedent text. Two research questions, each entailing a number of subsidiary questions, were addressed. One research question dealt with transfer of learning to recall tasks involving topically related texts; the second question dealt with analogy's effect on transfer of learning from an unfamiliar text to test-like situations.

Data for the study were collected on two separate occasions. On the first occasion, pre-experimental data were collected from 135 eleventh and twelfth grade students in order to assess their interest in and knowledge of the analogous material used in the experiment. On the second occasion, data were collected in an experiment from 100 of these same students who, on the basis of the pre-experimental data, had been stratified on level of interest and knowledge of the analogous content of the experimental texts and then randomly assigned to five treatment groups. In the experiment, students first read two passages designated for their respective treatment groups, next read and recalled in writing two test passages which were topically related to the second passage, and finally responded to a multiple choice test.

In order to provide a model against which to compare subjects' recall protocols, a template text base was prepared for each test passage. Each protocol was scored by comparing it to its template text base by a procedure which provided for examining the degree of similarity of recalls to the test passages. Propositions of each recall protocol were identified as either repeating propositions of the template text base or representing two levels of inferences drawn from the test passages.

Responses to the prediction-discrimination task were scored in such a way as to obtain one knowledge specialization score and two knowledge generalization scores. The generalization score measured discrimination between topically related response choices to make correct predictions. Knowledge specialization scores measured discrimination between topically related response items and non-topically related response items at two levels of discrimination.

The data were subjected to a number of two-way analyses of variance. The results of these analyses and Scheffé post hoc analyses indicated that the way in which analogy was presented in text had a significant effect on learning. Level of background knowledge was not shown to affect the impact of analogy on learning. Qualitative differences were observed in subjects' recall protocols across treatment groups, even though no significant differences were observed in the overall amount of information generated by subjects who were given relevant background information. Among subjects given that background information with analogy, those given advance analogous texts produced more text-based information, while those given analogy embedded in instructional texts produced more reader-based information. On the prediction and discrimination tasks, the group given the most analogy best discriminated topic relevant from topic irrelevant information within the context of specific applications of the text; no differences were observed in making such discriminations outside the context of specific applications of the text. All groups given instructional texts made significantly more appropriate predictions than control group subjects.

THE INTERACTIVE EFFECTS OF ANXIETY AND READABILITY ON READING COMPREHENSION AND RATE OF COMPREHENSION

Order No. 8010508

LUCKETT, ALBERT JOSEPH, PH.D. *University of Kentucky*, 1979. 147pp.
Director: Dr. Earl F. Rankin

The purpose of this study was to investigate the interactive effects of anxiety and readability on reading comprehension and rate of comprehension.

The subjects were eighty-eight students enrolled in developmental reading classes at a large urban community college. The subjects were all reading between the seventh and 10.2 grade level.

Material with college readability level was rewritten at second grade level while retaining the original concepts. A cloze test was constructed from both passages. Rate of comprehension was defined as the total time required to complete the cloze exercise.

A pilot study had demonstrated the effectiveness of instructions in either raising or lowering state anxiety level. Subjects' trait anxiety level was determined earlier. Subjects were randomly assigned to either a high state anxiety group or a low state anxiety group. Subjects were also randomly assigned to either the easy or difficult cloze passage.

Trait and state anxiety were measured using the *Trait-State Anxiety Inventories*. Predictions about the anxiety readability interaction were based on Spence's drive theory. It was hypothesized that high state anxiety would interfere with comprehension and rate on difficult material and facilitate performance on easy material.

The analysis produced results in the opposite direction. High anxiety facilitated performance on difficult material and interferred with performance on easy materials. Cloze scores on difficult material were uniformly low for both anxiety groups. This was attributed to the extreme difficulty level.

As expected, the difficult material produced significantly lower comprehension scores than the easy exercise. Level of state anxiety failed to produce a significant difference in comprehension. There were no significant differences across groups on rate of comprehension.

Several posthoc analyses were made comparing the extreme anxiety groups. High trait subjects in the high state group versus low trait subjects in the low state group were compared. None of the analyses produced significant results on rate of comprehension.

For cloze comprehension, the high anxiety group scored lower than the low anxiety group on both easy and difficult material. The difference was much greater on easy material than on difficult material. The cloze scores for both anxiety groups reading difficult material were uniformly low. The difference in cloze score means between subjects reading easy material and the subjects reading difficult material was highly significant in the expected direction.

The extreme high anxiety group produced cloze scores lower than the extremely low anxiety group. The difference was, for the first time, significant. The cloze score difference was greater for subjects reading easy material than for subjects reading difficult material. A significant difference in prestate anxiety means (anxiety measure taken at the beginning of the experimental session) was found only for the two groups reading easy material. It was concluded that the difference could have affected the cloze score difference between the two extreme anxiety groups reading easy material.

In general, predictions made based on Spence's drive theory did not materialize. Spielberger's trait-state view of anxiety was generally supported.

The major conclusion of the study was that first semester students with high levels of trait anxiety should be advised to avoid courses likely to induce high state anxiety. This would provide the opportunity for counseling sessions which might help to lower general trait levels.

The major limitation of the study was that the data was collected at the end of the spring semester. The subjects probably did not represent the group of students for whom this research might have been most meaningful. They had no doubt already dropped out of school.

Another limitation was the extreme difference in the readability of the easy and difficult cloze tests. This great difference may have masked any effects resulting from differences in state anxiety levels.

ANALYSIS OF SHORT-TERM AND LONG-TERM RECONSTRUCTIONS OF READING BY TENTH GRADERS

Order No. 8003827

PITTERMAN, JOY ELLEN, ED.D. *Indiana University*, 1979. 187pp.
Chairman: Carl B. Smith

The study had two main objectives: (1) to compare the oral and written production by tenth grade students immediately after reading a selection and again at a later time, and (2) to develop an instructional model for evaluating student responses to written materials. The second objective of the study continues the effort to determine how student's free reconstructions of text material give evidence of their operations upon printed information, both during and after the reading process.

The data were collected from 68 tenth grade students of superior and average ability. Half of the subjects produced an oral reconstruction and the other half a written reconstruction directly after reading/studying a text selection. All subjects produced a written reconstruction seven days later. Following collection and transcription of data two teams of teacher-evaluators assessed the oral and written samples by means of (1) a Coherence Scale devised by S. Smith, and (2) four Categories of Response which determine whether statements are evidence of recall, inference, text-related supplementation, or personal/emotional reaction.

The study was designed to provide answers to the following major question, will written or oral reconstructions provide a more coherent essay with more evidence of actively integrating the new information to existing knowledge structures immediately after reading and/or after long-term retention?

The data were analyzed using the P2V Program (Analysis of Variance and Covariance included Repeated Measures) in the *BMDP Biomedical Computer Programs, P-Series*, 1977, from the University of California Press.

Results indicate that (1) written reconstructions provide more coherent essays with more facts, inferences and supplemental statements than oral reconstructions during both immediate and long-term recall and (2) both the Smith Coherence Scale and Categories of Response provide a useful method of assessing oral and written reconstructions to yield further information about how a person integrates new information with existing knowledge structures.

THE EFFECT OF ATTENTION ON THE LEARNING AND RECALL OF IMPORTANT TEXT ELEMENTS Order No. 8009142

REYNOLDS, RALPH ELVIN, PH.D. *University of Illinois at Urbana-Champaign*, 1979. 168pp.

Two experiments involving students were conducted to investigate the relationship between the high memorability of important text elements and both the duration and intensity of the attention that readers give those elements. For purposes of the present experiments, attention duration was seen as being reflected by reading time, while reaction time to a secondary task was assumed to reflect the intensity of attention. In Experiment 1 subjects read a long story about marine biology that was accompanied by one of two types of inserted questions, or no questions. Following reading, a comprehensive short answer test was given. Subjects in Experiment 2 read a short passage from one of two perspectives or no perspective. Later, all subjects were asked to recall the passage twice: once from their original perspective and once from a new perspective. Subjects in both experiments read the passages on a computer controlled presentation system. Some read at their own pace, while others read at one of two accelerated machine paces. The primary task for all subjects was to learn as much as possible from the text. Their secondary task was to respond as quickly as they could (by pressing a key) to a tone that appeared occasionally in the text. Measures of recall performance, reading time, and probe reaction time were recorded for all subjects. Subjects spent more time reading text segments that contained information made important by their inserted questions or perspective. They also had longer probe reaction times to tones inserted in segments that contained important rather than unimportant information. For subjects whose reading time was paced, findings were mixed. Subjects in Experiment 1 showed longer probe reaction times when tones occurred in important text segments. In Experiment 2 there was no difference in probe reaction time for tones in perspective-important or perspective-irrelevant sentences. The results were discussed in terms of selective attention and ideational scaffolding notions about why subjects tend to learn some types of information but not others.

THE RELATIONSHIP OF SELECTED UNITS OF MEASUREMENT IN PASSAGES OF VARYING READABILITY TO READING RATE AND NUMBER OF VISUAL FIXATIONS

Order No. 8001495

RITTY, James Michael, Ph.D. Ohio University, 1979. 106pp.
Director of Dissertation: George R. Klare

Passages were prepared that varied in type (easy-hard), content (Paganini-Dix), and version (number of syllables, or words, or linear length). Twelve treatment groups each consisting of ten subjects were given the various combinations of passages. Multivariate and univariate analyses of variance and covariance were conducted to test main effects. The dependent variables used in the analyses were rate, forward fixations, regressions, and total fixations on the treatment passages. The corresponding variables from the practice passage were used as covariates. Additional t tests were conducted to examine the differences between the cell means when significance had been found in the previous overall analysis.

The results indicate an overall type effect present. The ANOVA tests indicate that rate is significant, but not fixations. There are no other significant main effects or interaction effects.

The t test analyses indicate that rate is significantly slower for the Dix hard passage with regular spacing than the Dix easy passage with regular spacing. The Paganini variably spaced passages show inconsistent results which may be due to restricted differences in the Reading Ease scores, to unexplained content differences, or to sizable differences in reading speeds of the subjects in the various cells. There are no t tests warranted for fixations.

Visual processing, under the conditions used here, seems to take place at much the same rate regardless of difficulty when measured in a unit smaller than a word. A reader's eye movements seem to be ballistic in nature indicating that under circumstances such as those in this study he/she may perhaps best be described as plodding through text. However, the number of regressions on spaced out material also indicates that processing may not always be done, at least, in a serial manner. Rate and fixations differ in passages using words or linear length but not in passages using syllables as a measure. It seems that, unless length is being controlled in terms of number of words, a preferred method of measurement when studying rate and fixations would be to use syllables or some other unit smaller than a word for measurement purposes.

THE RELATIONSHIP BETWEEN INTEREST AND READING COMPREHENSION Order No. 8004282

STEVENS, KATHLEEN CHARLOTTE, PH.D. *University of Illinois at Urbana-Champaign*, 1979. 166pp.

The purpose of this study was to investigate the relationships between interest and reading comprehension. The nature of this relationship was investigated for boys vs. girls, and for below average vs. above average readers. The study also examined the relationship between previous knowledge of a topic and reading comprehension concerning that topic.

Ninety-three Rantoul, Illinois public school students comprised the subjects for the study. All subjects were in grades five and six; all of the students in four classrooms were chosen as subjects. These subjects exceeded the national average in intelligence (Otis-Lennon average IQ = 114), reading ability (mean percentile = 67) and socioeconomic status.

Students were grouped as readers of high, average, or low ability, using the *SRA Assessment Survey*, comprehension subtest. The interests of these subjects were assessed on thirty topics by both a picture rating technique and a more traditional questionnaire technique. Topics on which subjects showed consistency (for high or low interest) were chosen for the reading passages.

Subjects read two passages on topics they had indicated were of high interest and two passages on topics they had indicated were of low interest. The passages were selections from the *McCall Crabbs Standard Test Lessons in Reading* (1961). The passages were balanced across interest conditions to control for passage effects. Subjects also completed the multiple-choice questions on the passages. These scores were used as the measure of reading comprehension.

Data from the experiment were analyzed using a multiple regression technique.

At another time, students were queried as to the extent of their interest on twenty-five different topics. They were also given knowledge quizzes on each of these twenty-five topics. These quizzes consisted of four multiple-choice questions on each topic. In this manner, four topics were isolated for each subject: (a) a topic of high interest and high knowledge; (b) a topic of low interest and low knowledge; (c) a topic of high interest and low knowledge; and (d) a topic of low interest and high knowledge. Subjects were then asked to read a passage on each of these four topics. Again, passages were selections from the *McCall Crabbs Standard Test Lessons in Reading, balanced across the four interest-knowledge conditions.*

Data from this phase of the experiment were analyzed using an analysis of variance repeated measures design.

The following findings resulted: (1) there was no overall relationship between interest and reading comprehension; (2) there was no difference in this relationship for either sex group; (3) there was a significant (at .05 level) relationship between interest and reading comprehension for higher ability students. That is, higher ability students read significantly better under the higher interest condition. (These students ranked in the top 15% of the nation.) (4) there was no effect of previous knowledge on reading comprehension. Thus, while the investigator found a significant relationship for higher ability students, none of the other relationships were significant. It must be noted that the knowledge quizzes produced so much enthusiasm for learning that subjects educated themselves concerning these topics. Thus, the investigator felt that there was no "a true knowledge vs. no knowledge" condition at the time of testing.

THE EFFECT OF TEXTUAL COHESION ON THE COMPREHENSION OF CONNECTED DISCOURSE

Order No. 8004584

STONE, V. FRANK, PH.D. *University of Virginia*, 1979. 190pp.

Previous work in the area of textual cohesion and inter-sentential relations have suggested that subjects carry information from a previous sentence in comprehending each successive sentence. Additionally, it has been suggested that readers, when confronted with an ambiguity, choose to resolve that ambiguity immediately. Prior research dealing with sentence pairs and five-sentence paragraphs indicates that readers are carrying information between sentences. There has been little work, if any, directed at what readers do when processing ambiguous information within a passage of connected discourse. To investigate this question, two empirical studies were necessary: (1) the preliminary investigation to secure material for the major investigation, and (2) the major study to test the hypothesis. The preliminary study included 44 university students who served as subjects and were randomly assigned to one of two material sets (each material set contained the two experimental conditions: direct inference case entailed verb and indirect inference case entailed verb). There were 32 females and 12 males who participated in the study. The design was a repeated measures-mixed design. Subjects read silently 20 five-sentence paragraphs that were individually displayed on a rear projection screen by a Kodak Ektagraphic projector. The paragraphs were modified so that each subject read ten paragraphs in the direct inference condition and ten paragraphs in the indirect inference condition. To compare the effect of entailed verbs on latency time, the same target sentence was preceded by verbs in both conditions. This was done by utilizing two sets of materials: A and B. The latency times of the target sentence in each paragraph was emitted by an Automated Data Systems 1248B Timer/Counter and manually recorded. All subjects were tested individually. The analysis indicated that those target sentences preceded by the direct inference entailed verb were significantly ($p < .01$) processed more rapidly than the target sentences preceded by indirect inference entailed verbs.

The 20 entailed verbs from the preliminary study were replaced in the original text. The 12 subjects, 7 female and 5 male university graduate and undergraduate students, were randomly assigned to one of the two material sets. The design was a repeated measures-mixed design. Subjects read silently the two passages ("Remember the Alamo" and "Appomattox: An Epic Surrender" taken from *The Reader's Digest*) that were typed on 5 x 9 cards and placed on an EDL/EYE II machine. After each passage, subjects were asked to recall all the information they could remember from the passage. The passages were modified so that each subject read ten sentences that were preceded by verbs in the direct inference condition and 10 sentences preceded by verbs in the indirect condition. To compare the effect of entailed verbs on reading time, the same target sentence was presented in both conditions. This was accomplished by having two material sets: A and B. The reading time of each target sentence was calculated from the printout of the EDL/EYE II machine. All subjects were tested individually. The analysis indicated that those sentences preceded by a direct inference entailed verb were read significantly ($p < .001$) faster than those target sentences preceded by an indirect inference entailed verb. The conclusions of this study are that readers, when processing information from a natural text, carry information across sentences using the preceding information in an effort to comprehend successive sentences, and that the linguistic structure of a text assists readers in integrating information from the passage into their message base.

THE EFFECT OF SCHEMATA AND TEXT LENGTH ON THE NUMBER OF INFERENCES PRODUCED BY ADULT READERS IN THE FREE RECALL OF A FICTIONAL STORY

Order No. 8010490

TAYLOR, ELIZABETH, ED.D. *State University of New York at Albany*, 1979. 148pp.

The purpose of this study was to investigate the effect of schemata on the number of inferences produced in the written recalls of a fictional story when it was presented in three lengths. Specifically, the study asked two questions: (1) will a schema suggested to a reader before reading a story affect the number of inferences produced in the written free recall of that story, and (2) will the length of the story affect the number of inferences produced in the written free recall.

A total of 120 college students were assigned to one of four treatment conditions and one of three story lengths. The three text lengths were all versions of the story, *Freddie Miller, Scientist.* One text was the story in its entirety. The second was a condensation of the story, and the third was the first episode of the story. Within each text, subjects were randomly assigned to one of four orienting conditions. The first orienting condition stated that the story was about a boy being raised in a sexually stereotyped environment. The second stated that the story is about a boy helping his sister. The third stated that the story is about a boy who wants to be more like his father than his uncles, and the fourth was a control, where no specific instructions were given. In addition to receiving the schema orienting instruction, subjects were asked to judge whether the ending fit the rest of the story, in order to increase their involvement with the text.

Subjects were asked to read the text silently and then to write everything they could remember about the story. Both the reading and the writing time were unlimited within the fifty minutes allotted for a class session.

An inference was defined as a piece of information in the recall that is not in the original text. The effect of the schemata and the story length on the number of inferences produced in the free recalls was determined by counting the number of new pieces of information in the recalls. The text and the recalls were turned into micropropositions using the system developed by Kintsch (1974), Turner and Greene (1977), and Harste and Feathers (1979). To control for the varying length of the individual recalls, a ratio of new micropropositions to total micropropositions in each recall was calculated. This ratio was used in two 3 x 4 factorial arrangement of treatments (length x orienting conditions) to look for differences between orienting conditions and text length.

The results of the study showed that the four orienting conditions did not affect whether the percentage of new micropropositions or the total number of micropropositions in the free recalls. The three text lengths did affect both the number of new micropropositions and the total number of micropropositions, with the greatest amount of new micropropositions and total micropropositions being recalled in the whole story condition. Several reasons for these results were suggested. Unlike previous studies about schemata, the orienting schemata were not mutually exclusive, and could be arrived at by the reader from the text independently of the instructions. In addition, the text was not contrived to be ambiguous or metaphorical. Thus no one interpretation seemed to favor greater integration of the text with prior knowledge, and the number of inferences in the recalls were not significantly different. The detail and the structure of the whole story did seem to facilitate greater integration of the text with the readers' knowledge, which was reflected by proportionately more inferences in the recalls of that text condition.

Further research is recommended to investigate the schemata and text lengths on inference with children, and with oral retellings (Goodman, 1978; Goodman & Burke, 1973). Similar research may extend understanding of the role of schemata and text length in text recall and inference production.

DISCOURSE EFFECTS ON CHILDREN'S RESOLUTION AND RECALL OF ANAPHORIC RELATIONSHIPS Order No. 8012183

TEDDLIE, JANET CURTIS, PH.D. *Texas Woman's University*, 1979. 372pp.

The purpose of this study was to investigate children's resolution of anaphoric relationships and to determine whether characteristics of connected discourse influence anaphoric processing. Three discourse-level variables were studied: (1) recall of thematized anaphoric relations (those with more cohesive ties within the text); (2) surface form of the reference (anaphoric or lexical); (3) the effect on discourse processing strategies of reading the whole text or reading it additively. A fourth variable was concerned with differences in second and fourth graders recall of anaphoric propositions. Two related, but secondary, variables also were included: (1) the relationship between reading the whole text or reading it additively and recall of the most structurally important propositions; (2) the relationship between anaphoric resolution and proposition-level inferencing.

Randomly selected second and fourth graders were given a word recognition screening test to select 80 subjects who did not appear to have decoding difficulty with story vocabulary. These subjects read the story orally, then worked simple arithmetic for one minute to clear short-term memory.

Two types of dependent variables were used to measure semantic memory for text information. The first was a divergent, open-ended, free recall task, chosen to reflect the selection, organization, generalizations, and inferences generated by the subject's own reading. The second was a convergent measure of response to a cued recall task. Cues were 16 targeted anaphoric items, typed on separate cards in sentences in which they appeared in the text. Subjects read each sentence and told what they believed the referent to be.

Two analyses of discourse characteristics of the passages formed the bases for scoring. One was an analysis of cohesion based on Halliday and Hasan's procedure. This produced counts of cohesive ties to thematized and other major referents. The second was an analysis of the underlying semantic and logical relations defined by Frederiksen's system of text-analysis. Each concept and relation in a subject's free recall was compared item by item to the contingent proposition in the text-base. Data produced by this scoring included proportionate recall of anaphora, propositions, structurally important propositions, and proposition-level inferences. Recall of all major cohesive ties was tallied also. Cued recall was scored on the basis of text-consistency. Results were tested statistically with 4-way analyses of variance, and also were analyzed qualitatively.

Major findings showed: (1) the thematization variable was significant in cued recall, but not in free recall. Multiple analyses on recall of discourse referents revealed those with few cohesive ties were recalled as frequently as those with many cohesive ties; (2) anaphoric references were less well-recalled consistently than were lexical references. Additionally, subjects reading the version with explicit references made more text-consistent, proposition-level inferences. (3) Recalls were more complete for subjects reading additively, however, fourth graders reading the whole text recalled more structurally important propositions; (4) fourth graders recalled more anaphoric and propositional information than did second graders.

It was concluded that the theory of cohesion does not describe factors influencing semantic recall of referents in absence of other discourse characteristics such as structural importance, or distribution of reference within-and-across episodic or event boundaries. Results of anaphoric recall were consistent with previous research findings, and indicated the anaphoric form was not recalled proportionately as well as lexical references. Results of both quantitative and qualitative analyses suggested discourse factors do influence anaphoric resolution and recall.

CLUSTERING IN FREE RECALL TASKS IN NORMAL AND EXCEPTIONAL CHILDREN Order No. 8002205

TURNER, Susan C. Teets, Ph.D. University of South Florida, 1979. 130pp. Supervisor: Dr. Stuart Silverman

This investigation was undertaken in order to examine the quantitative and qualitative differences in free recall among exceptional and normal groups of students under different treatment conditions. Subjects were assigned to one of five groups based on their classifications as normal or exceptional students. The classifications of emotionally handicapped, gifted, learning disabled, educable mentally handicapped, and normal were used as group labels.

Each of the five groups contained 30 elementary school children currently enrolled in the Hillsborough County school district. Each subject was verbally administered four different 20-word categorized lists under the following four conditions: a cue prior to list presentation, continuous verbal reinforcers following each correct response, a combination of cue and continuous verbal reinforcers, and a no-treatment condition. Following the presentation of each list, subjects verbally recalled as many words as they could remember.

The two dependent variables were the number of words recalled per list and degree of categorical clustering per list. Bousfield's and Bousfield's (1966) stimulus category repetition (SCR) index was used to compute clustering scores. Data were analyzed using an analysis of variance for repeated measures. Results of the data analysis supported the hypotheses that there are differences between some groups of exceptional and normal students in the number of words recalled and the degree of clustering in free recall situations.

Duncan's multiple-range test for post-hoc pair-wise comparisons indicated that both the Gifted and Normal groups recalled significantly more words than the Educable Mentally Handicapped group. Data relative to the clustering phenomenon showed a significant overall difference among groups, but pair-wise comparisons indicated no specific group differences. Thus, differences in the degree of clustering were not clearly defined by the data. Further research is warranted in this area.

Differences in amount of recall under the four treatment conditions were also observed. Subjects recalled significantly more words under the Cuing condition than under the No-treatment and Reinforcing conditions. Significant differences were also noted between the combination Cuing-reinforcing condition and the Reinforcing condition. Thus, it was concluded that presentation of a category cue before list presentation acts as a facilitator for short-term memory, increasing the number of words recalled. Continuous verbal reinforcers did not facilitate recall, and in fact, may have acted as inhibitors in the memory process. No significant treatment differences were observed on the clustering variable.

The other research hypotheses involved interaction effects of the two independent variables, group by treatment, on amount of recall and degree of clustering. These hypotheses were not supported by the data. Further research was suggested.

COGNITIVE AND AFFECTIVE INFLUENCES ON TEXT COMPREHENSION Order No. 8010318

WEBER, CAROL K., PH.D. *New York University*, 1979. 146pp. Chairperson: Professor Lenore H. Ringler

This research was designed to explore the influence of two factors on the comprehension of written discourse; the amount of feeling or interest that a reader expressed toward a particular subject and the amount of knowledge that the reader exhibited about the subject matter. Three experimental hypotheses and one research question were investigated. Hypothesis one predicted the influence of knowledge alone; hypothesis three predicted the additive influence of interest and knowledge; and the research question addressed the interaction of the two variables.

The sample consisted of an urban college population (N = 108). Interest, knowledge, and text comprehension were studied across three topics representing academic (biology, psychology) and nonacademic (basketball) areas. An interest measure, covering expressed and manifest interests, and a pre-existing knowledge measure, covering detail and concept knowledge, were administered. Approximately three weeks later, comprehension in each of the topics was measured using the cloze procedure. Treatment of data involved correlational and multiple regression analyses. While the literature suggested a relationship between interest and knowledge, it did not give clear indications as to a theoretical basis for choosing a particular ordering of variable entry in the multiple regression analyses. Therefore, for each analysis predictor variables were entered into the regression equation in both possible entry orders with general reading ability used as a covariate.

Findings indicated a strong relation between interest and knowledge across subject areas with differences between academic and nonacademic areas. Hypothesis three, which stated that interest and knowledge combined would be better predictors of reading comprehension than either variable

taken singly, best fit the data. As hypothesis one and hypothesis two are encompassed by hypothesis three, these two hypotheses were also supported. However, the amount of variance contributed by each variable was significantly effected by ordering. In each area, when interest was entered first it accounted for a significant proportion of the experimental variance independent of general reading ability. Knowledge accounted for a significant proportion of variance over and above interest. When knowledge was entered first, almost all of the variance previously accounted for by interest was accounted for by the knowledge factor alone. However, in two areas, interest still accounted for a small but significant amount of variance. Examination of the possible statistical interaction of the two variables yielded negative findings.

This study strongly supports theorists who emphasize the active role of the learner in the learning process and theorists who emphasize that individual behavior can best be understood through integrated study of affective and cognitive factors. The overriding significance of knowledge, found in this study, strongly supports that background experience and knowledge brought to text influence depth and scope of understanding. Findings indicate that individuals approach different reading situations with varying degrees of preparedness based upon their experience and accumulated knowledge in specific content areas. While these findings appear to offer strong support for using an isolated cognitive framework for studying reader performance, the fact that interest and knowledge appear to be operating jointly in influencing performance, indicates that interest is an important factor that should not be dismissed.

In considering the joint effect of interest and knowledge on reading performance, findings of this study support that interest and knowledge have qualitatively different influences. That is, interest could be interpreted as having a predominantly indirect influence on performance, while knowledge could be interpreted as having a great influence. To gain understanding of the dynamics of how these factors operate jointly, it was suggested that interest and knowledge be studied within a developmental framework.

AN ANALYSIS OF READERS' EXPECTATIONS FOR STORY STRUCTURES

Order No. 8005732

WHALEY, W. JILL, PH.D. *State University of New York at Buffalo*, 1979. 209pp.

This study was designed to investigate one possible aspect of reading strategy and reading comprehension--individuals' expectations for structural elements in simple stories. In addition, this research probed into developmental differences in readers' expectations for stories. The paradigm or rationale for the study was as follows: (1) it was hypothesized that individuals do expect certain identifiable structural elements and sequences of information in stories when they read; (2) the set of expectations for story structures was described by the researcher as a schema or a set of rules taking the form of a story grammar; (3) the researcher suggested that if individuals do have expectations for structural elements in stories, then they should respond in certain ways when presented with various tasks; (4) data were collected and analyzed; and (5) if the subjects' responses matched the researcher's predictions, then it could be concluded that there was some support for the belief that individuals did expect certain structural elements (or that they used a schema) when reading stories, and that the grammar used in the study was an appropriate description of those expectations.

Subjects in this study were 50 third graders, 51 sixth graders, and 52 eleventh grade students. All subjects were average or above average readers. The Mandler and Johnson story grammar was postulated to represent the set of expectations readers might have for story structures. The grammar describes the major story parts and sequence of parts as: Setting, Beginning, Reaction, Attempt, Outcome, and Ending. Using the Mandler and Johnson story grammar, materials for the study were parsed so that the six major story parts were identified in each story.

The students silently read three stories (or parts of stories) in each of two separate types of tasks (six stories per subject): predicting what should occur next in incomplete stories of otherwise canonical form and supplying information for a missing part of otherwise canonical stories (a macro-cloze task). There were five conditions for the first task. The same three stories were manipulated across all five conditions. In condition A, subjects read three story Settings; in condition B, the three stories contained a Setting and a Beginning; in condition C, the stories contained a Setting, a Beginning, and a Reaction; the condition D stories consisted of a Setting, a Beginning, a Reaction, and an Attempt; and the condition E stories had all nodes except the Ending. About 10 students from each grade level were randomly assigned to one of the five conditions. Subjects were asked to read the stories and to finish the stories by telling them aloud.

For the second task, there were again five conditions with three stories in each condition. The same three stories were manipulated across all five conditions. In condition F, subjects read stories that were canonical except that Settings were deleted. In the remaining four conditions, the Beginning, the Reaction, the Attempt, and the Outcome were each systematically deleted, forming one condition for each type of deletion. About 10 subjects from each grade were randomly assigned to one of the five conditions. Assignment to conditions in Task 2 was independent of assignment to conditions in Task I. After reading each story, subjects were asked to tell a part of the story that could fit in the blanks. Subjects' responses for all six stories were tape recorded. The two major forms of analyses were calculation of the proportion of times that readers' responses matched the story parts predicted by the grammar, and repeated measures analysis of variance.

Four major conclusions were drawn. (1) Individuals' responses could be well accounted for by the theory that readers do indeed use as set of rules for expecting particular structural elements and sequences of elements in simple stories. (2) The Mandler and Johnson story grammar could aptly describe average and above average readers' expectations for story structures. (3) There were developmental differences in the degree to which good readers employed a schema as a set of expectations for reading stories; third graders tended to use the schema less frequently than did sixth and eleventh graders. (4) Differences were minor between grades in qualitative use of the schema as a set of expectations for story structures; i.e., students at each grade level appeared to use the same schema.

THE EFFECTS OF THE EXTENT TO WHICH METAPHORS (FIGURATIVE LANGUAGE) APPEAR IN PROSE ON THE READING COMPREHENSION OF SELECTED GROUPS OF FIFTH AND EIGHTH GRADE ELEMENTARY SCHOOL STUDENTS

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WINKELJOHANN, ROSEMARY JOSEPHINE, ED.D. *University of Illinois at Urbana-Champaign*, 1979. 178pp.

Problem. The purpose of this study was to investigate the effects of metaphors in prose on children's ability to comprehend reading material. Basic questions were posed: Why do children fail to read literary works? Is there some element embedded in the material which impedes comprehension? Does lack of interest in literary materials stem from the difficulties in the literary forms? Why are some Newbery Award books more popular than others? Two main hypotheses were formulated.

Hypothesis One: The greater the extent to which metaphors appear in narrative, the less the degree to which the material is likely to be comprehended.

Hypothesis Two: The relationship existing between the frequency with which metaphors appear in the narrative and the pupils' ability to comprehend the material is different at the eighth grade level than at the fifth grade level.

Procedures. The hypotheses were tested with 60 selected fifth grade pupils and 60 eighth grade pupils screened from a larger group of approximately 600 children by giving a mental ability test, a reading achievement test, and a response to literature test. By eliminating the variables of possible reading problems, mental ability limitations, and inability to respond to literature, the research tested the hypotheses by measuring children's ability to comprehend material controlled for metaphors. The hypotheses were tested by administering to selected fifth and eighth grade children a *Metaphor Protocols Test* consisting of a selection from Newbery Award books controlled at the fifth grade reading level as indicated by *The Fry Readability Scale* and *The Botel-Granowsky Complexity Formula* and containing 20 thought units. Protocols were also controlled for metaphor count. Some protocols contained no metaphors, others contained one or two metaphors, and others still had three or four metaphors. The results from the children's scores on the *Metaphor Protocols Test* were conputed for correlations and analyzed by using means, standard deviations, and frequency scores.

Results. Hypothesis one and hypothesis two were supported by the data. From the data in this research study, support was given to indicate that metaphors can hinder children's comprehension of prose. The mean score of the fifth grade pupils on the protocols containing no metaphors was higher than on protocols containing three or four metaphors. Average readers (as tested by the California Reading Achievement Tests) were unable to achieve the same scores on protocols containing three or four metaphors as they did on those containing no metaphors even though all the protocols were at a fifth grade readability level. The eighth grade pupils gained greater meaning for the fifth grade reading level protocols controlled for metaphors. The eighth grade pupil's mean score declined as did the scores of the fifth grade pupils when the number of metaphors increased, but not to the same degree.

The main conclusion was that metaphoric language is a hindrance in reading for fifth grade pupils. There is more to reading difficulties than to indicate the reading level as shown by readability formulas. The understanding of prose containing metaphors appears to be a more complex interaction of thought and language.

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